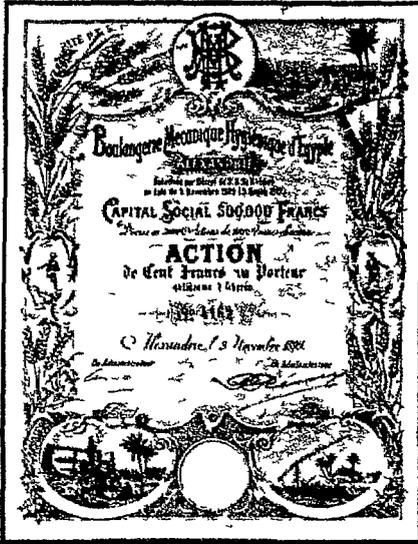


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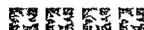
Developing a Book-Entry System in Egypt

The Egypt Capital Markets Development Project

H John Costalos



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TABLE OF CONTENTS

EXECUTIVE SUMMARY	i
A PRELIMINARY PROJECT PLAN OUTLINE	1
B PREREQUISITES FOR DEVELOPING A BOOK-ENTRY SYSTEM	2
C SUMMARY OF FINDINGS AND IMPRESSIONS	3
C1 Meetings with the EU Commission's Project Management Unit	
C2 Meetings with the Central Bank of Egypt	
C3 Meetings with Misr for Clearing Settlement and Depository	
C4 Summary	

EXECUTIVE SUMMARY

The Capital Markets Development (CMD) project's subcontractor H. John Costalos visited Cairo from November 10 to 20, 1998, in order to provide advice on developing a book-entry system in Egypt. After several meetings with the Central Bank of Egypt (CBE), Misr for Clearing, Settlement, and Depository (MCSD), the European Union's Project Management Unit (EU-PMU), he formulated a preliminary implementation plan and list of prerequisites for developing a book-entry system.

The preliminary implementation plan has four stages:

- 1 Fact-gathering and analysis, which is in progress
- 2 Developing system requirements
- 3 Project definition, culminating in a fully developed implementation plan
- 4 Implementation tasks

To expand on the initial stages of the implementation plan, this report also provides a detailed list of prerequisites that should be accomplished as part of developing a system-requirements document (stage 2, above). These prerequisites fall into five areas:

- 1 Establish the legality of book-entry securities
- 2 Define the numbering (ID) methodology for securities
- 3 Define the numbering (ID) methodology for banks
- 4 Evaluate the payment and accounting system to be used (funds/current accounts)
- 5 Determine the level of accounting to be used for securities holdings

At the end of this report, Costalos offers some observations based on his meetings with the EU-PMU, CBE, and MCSD. During these meetings he found that CBE officials have a high degree of interest in developing an automated book-entry system and that no projects to implement such a system are currently being undertaken or planned by other donors.

Many of Costalos' recommendations have been incorporated into the CMD project's 1999 Work Plan and others will be used to guide future project activities. Full implementation of the book-entry system, an endeavor in which the project expects to advise and assist the Egyptian Government, will take several years.

DEVELOPING A BOOK-ENTRY SYSTEM IN EGYPT

H John Costalos

A Preliminary Project Plan Outline

The following outline provides recommended steps for developing a book-entry system in Egypt and should serve as a rough guideline for the CMD project as it undertakes its 1999 work-planning. This outline is only preliminary, and the project will be able to further specify the implementation plan as it completes the preliminary steps discussed in section B of this report.

- I Fact-gathering and analysis (in progress)
 - A Complete gathering of information, re current market and systems [This includes further interviews]
 - B Evaluate current identification and/or numbering system for commercial banks [In use at CBE and elsewhere]
 - C Evaluate current identification and/or numbering system for securities [In use at CBE and elsewhere]
 - D Evaluate current accounting system in use at CBE [This includes processing of current accounts]
- II Development of system requirements
 - A Develop and determine bank numbering methodology to be used [The system to be used and who will maintain it]
 - B Develop and determine bank numbering system to be used [The system to be used and who will maintain it]
 - C Determine level of securities accounting [Balances to be kept at bank or beneficial-owner level]
 - D Determine method of payment to be used [How will securities be paid for?]
 - E Develop user requirements document, i.e., the functions of the system, what it will do [Determine whether implementation should be in phases]
 - F Egyptian government review and approval of system requirements [Determine management levels and individuals]
- III Project definition
 - A Determine who will be developers of system [In-house staff and/or software vendor]
 - B Determine hardware and software to be used [To be done by developers]
 - C Develop project plan for implementation

IV Implementation tasks

- A Design book-entry system [How the system will work—the functions of the system]
- B Design input and output forms [Number of copies and document control]
- C Develop automated system [Includes program development and testing]
- D Develop manual procedures [In connection with automated system]
- E Train bank operations personnel [Operators of automated system and receipt and disbursement of forms]
- F Train commercial banks and other users [Train direct and indirect users of system]
- G Install and cut-over of book-entry system

B Prerequisites for Developing a Book-Entry System

The tasks listed below expand on section I of the preliminary project outline and are essential prerequisites to developing the book-entry system. Their completion prior to the development of system requirements will help assure a more expeditious preparation and finalization of the system's requirements document. The requirements document should explain the functions to be included in an Egyptian book-entry system—i.e., *what* the system will do.

A project plan for the design and implementation of the system should be prepared based on the following requirements. In addition, the appropriate management levels of all parties involved, prior to the design and implementation of the system, should approve the document.

- 1 Establish legality of book-entry securities
 - Determine if the current laws are adequate for issuing securities in book-entry form
 - If new statutes must be written, determine how long it will take. This will impact the starting of the development of a system.
- 2 Define the numbering (ID) methodology for securities
 - Evaluate whether the securities numbering system at MCSD and elsewhere can be used or adapted for book-entry government securities
 - If not adaptable, a numbering system that could be used for all securities should be developed. [The use of a check digit as the last digit of the number helps reduce data-entry errors and is the preferred approach.]
 - An organization should be assigned the responsibility for maintaining the numbering system and issuing new security numbers.

- 3 Define the numbering (ID) methodology for banks
 - Evaluate whether there is a method in use that is acceptable for the book-entry system
 - If an acceptable methodology is unavailable, a numbering system should be developed [The use of a check digit as the last digit of the number helps reduce data-entry errors and is the preferred approach]
 - Determine the organization that will maintain the numbering system [CBE would seem like the appropriate entity]
- 4 Evaluate the payment and accounting system to be used (funds/current accounts) for the following
 - for issuing securities
 - for interest payments and the redemption of securities
 - for the transfer of security ownership (secondary market activity)
- 5 Determine the level of accounting to be used for securities holdings
 - Will accounting for securities be at the bank level or beneficial-owner level?
 - This may require a policy decision (by whom?)

Except for the legal question, the above prerequisites can be developed in conjunction with, or as part of, the preparation of the requirements. As stated earlier, this would add to the time needed to complete that task.

The lack of electronic funds payment and an automated accounting system indicate that the book-entry system may have to be developed in phases, since automated delivery-versus-payment aspects will not be possible. The objective of the initial phase should be to attain the benefits of eliminating securities in paper form by issuing and processing them in electronic form. These benefits should be delineated in the requirements document.

C Summary of Findings and Impressions

The following is a summary of the fact gathering and impressions gained in my visit to Cairo from November 10 to 20. The objective of my visit was to ascertain whether a book-entry system would be helpful to Egypt and determine the approach that should be taken. In almost all meetings, I was accompanied by Barry Gray and Mervat Tawfik (from USAID) and, occasionally, other members of the CMD project team.

C1 Meeting with the EU Commission's Project Management Unit

The EU-PMU is not currently implementing any projects related to the development of a book-entry system and does not appear to be planning any such project in the near future. During the meeting with the EU-PMU, they noted that I had authored the User Requirements for an IMF basic book-entry system and that, although no action has been taken to date, they had proposed that the Central Bank of Egypt acquire the system. I advised that the IMF software should not be acquired, except, if desired, for demonstration purposes.

C2 Meetings with the Central Bank of Egypt (3)

The Central Bank of Egypt (CBE) is the project's main contact for the proposed book-entry system—it will be tailored to their needs and be theirs to run. The CBE management and staff described the government securities market as it exists today, and overall, they indicated a desire to have a book-entry system. This interest (and also some anticipated resistance to change) was also evident in a presentation I gave to some CBE middle managers.

The CBE now issues T-bonds, which are traded on CASE and settled at MCSD (see below) and T-bills, which are not traded on the exchange. The bills and bonds are both in certificate form.

Barry Gray, the CMD project's central banking advisor, and I witnessed an auction of T-bills. The bids were tabulated and sorted in a simple but automated system, which produced listings and tabulations of the bids received.

There is no electronic payment system in Egypt, and one is left with the impression that the degree of automation at the CBE can, and should, be increased substantially. A book-entry system would achieve the benefits associated with replacing certificate securities with securities in electronic form, in addition to increasing secondary-market trading. However, it will not be able to achieve the full benefits of book-entry until the payment and accounting systems are also automated. Therefore, the book-entry project should be implemented in phases.

C3 Meeting with Misr for Clearing, Settlement, and Depository

MCSD clears and settles T-bonds traded on CASE. MCSD indicated that their system has a high degree of automation. Its hardware configuration runs on dual processors, and additional dual processors, which can be used for backup purposes and disaster recovery, are located in both Cairo and Alexandria.

MCSD's software was developed in-house and is based on the French system, SICOVAM. The depository appear to be in good shape to handle the exchange's future needs, which includes trading in both bonds and equities.

C4 Summary

Meetings took substantially longer than anticipated at the CBE, partly because of this subcontractor's need for interpreters, as well as the wide variety of topics addressed. While the meetings were more time-consuming than expected, they demonstrated the CBE's interest in devoting time and personnel to the tasks at hand. Project meetings, needed because of the CMD project's magnitude, required additional time.

In addition to the institutions discussed above, the Ministry of Finance and banks (both in Cairo and remote locations) are key players and participants in a book-entry environment and should be consulted for additional information and insight when developing the system's user requirements.